

Monitoring as an Evaluation Strategy

March 6, 2003



Objectives

- **Present an overview of several graphical project planning techniques and provide a “cookbook” approach to creating these charts**
- **Understand the use of Gantt, PERT, and CPM charts as monitoring techniques**



What is Monitoring?

- ✿ **Comparison between program operations and expectations**
- ✿ **Problem identification and program planning**
- ✿ **Program implementation and impact**



Problem Identification and Program Planning



How



Who



When



What



Where



Why



Program Implementation and Impact

- **Financing**
- **Personnel**
- **Other resources**
 - **Timing**
 - **Outputs**

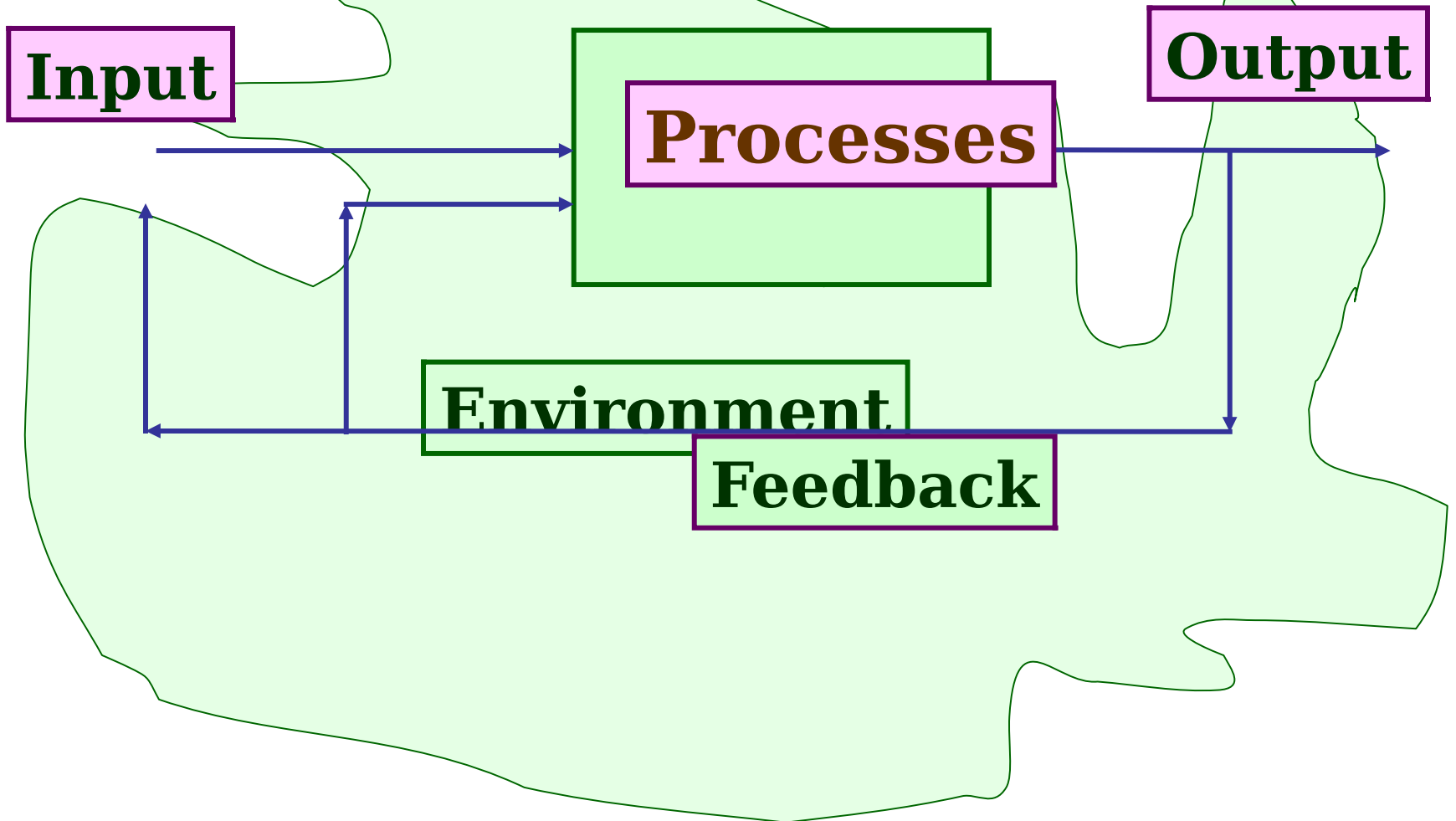


Limitations

- **Information Systems**
- **Unclear guidelines**
- **Inconvenient - time and resources**
- **Complexity of health care systems**
- **Relevance to program outcomes**
- **Focus too narrow or broad**

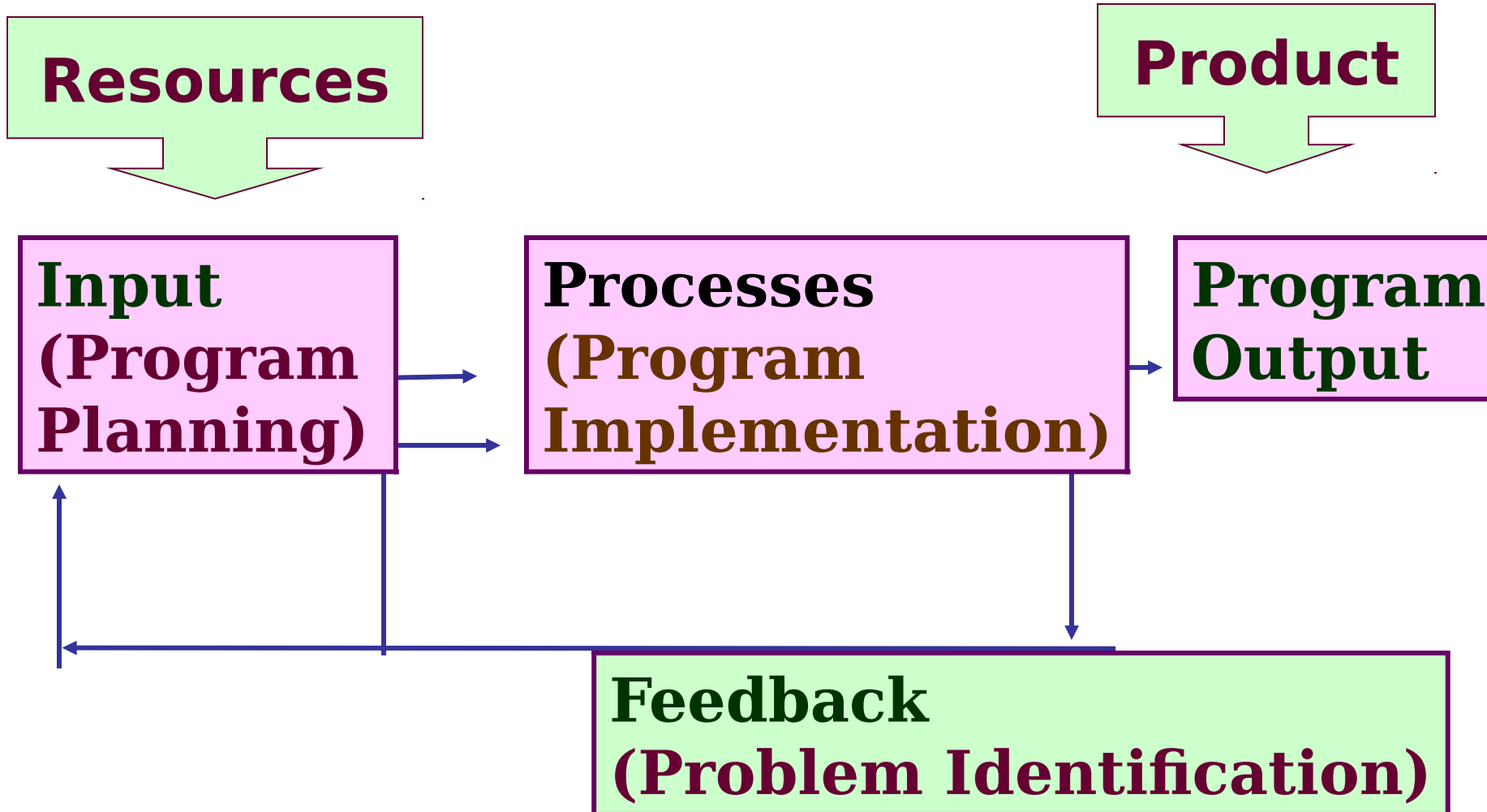


System(review slide)





Program Activity





Data for Monitoring: Inputs

✿ **Finances**

✿ **Personnel**

✿ **Transportation and space**

✿ **Equipment and supplies**

✿ **Information guidelines**



Data for Monitoring: Process

-  **Specific activities**
-  **Sequencing**
-  **Timing**



Data for Monitoring: Outputs

- ✿ **Direct outputs**

- ✿ **Intermediate effects of direct outputs**

- ✿ **Ultimate effects of direct outputs**



Intermediate Effects

- **Rates of hospitalization**
- **Lengths of stay**
- **Referral rates**
- **Vaccine rates**
- **Cancer screening**
- **Patient satisfaction**
- **Disenrollment rates**



Ultimate Effects

- **Age-specific mortality rates**
- **Years of potential lost life**
- **Low birth-weight rates**
- **Rates of communicable disease**
- **Cancer survival rates**



Monitoring Morbidity and Mortality

**Morbidity: The number
of people who have a
certain disease**

**Mortality rate: number
of deaths from a specific
cause or disease in a
population**



Other indicators

- **Disability and functional status**
- **Premature retirement**
- **Day of work loss**
- **Functional status and dimensions of daily living**
- **Incidence and prevalence**



Application to Decision Making



Day-to-day management decisions

- Resources are being used properly**
- Events are occurring on time**
- Results are achieved as expected**



7 Components of Evaluation



Progress



Efficiency



Effectiveness



Adequacy

- **Impact**
- **Relevance**
- **Sustainability**

Monitoring Techniques and Interpretation



Gantt - PERT- CPM

Gantt	Early 1900's Henry L. Gantt, an engineer and social scientist.
PERT	Program Evaluation and Review Technique
CPM	Critical Path Method



Gantt, PERT/CPM

Tasks are given:

- ✿ **Name/description**
- ✿ **Estimate of the amount of calendar time required**
- ✿ **List of other any tasks that must be completed before this task can begin (or end)**



Use Gantt and PERT/CPM Charts to:

- **Plan a project according to activity and time guidelines**
- **Understand the overlap and sequence of activities**
- **Monitor progress**



Gantt Charts

- **Invented in the early 1900's by Henry L. Gantt, an American engineer and social scientist.**
- **Graphic guide for carrying out a series of activities, showing the start date, duration, and overlap of activities.**



Gantt and PERT/CPM Charts

- **Most useful in the planning stages, to mark when each activity should start and to draw the linkages in timing between activities.**
- **Good for tracking progress and rescheduling activities if progress is slowed**



Advantages of Gantt Charts

- **Time is explicit (and linear)**
- **All tasks visible in relationship to others**
- **Deadlines are shown**
- **Project status at intermediate times is shown**
- **Can show progress by “filling in” task boxes**



Shortcomings of Gantt Charts

- **Tasks might not be associated with people**
- **Person-hours are not indicated, only calendar time**
- **Dependencies are not explicit**
- **Critical paths are not explicit does**
- **No recorded difference between original plan and actual**



PERT

- **More compact than the Gantt, but at the cost of a linear time scale**
- **Time resources required by a task are given numerically, rather than appearing graphically**
- **May make it harder to quickly see what areas are using the most time resources**



Critical Path Method

- **Shows explicit indication of the “critical path”—that sequence of tasks that defines the minimum amount of time for the project.**
- **Shares the same strengths and weaknesses as the PERT**
- **Often lumped together with PERT as one technique.**



Disadvantages of Gantt, PERT, and CPM

- **Planners must know how the program is to proceed from start to finish**
- **Constructed to impress higher level management**



Q/I Techniques

- **Run Chart**
- **Control Chart**
- **Checklist**
- **Pareto**
- **Cause and effect Diagram**
- **Flow Diagram**



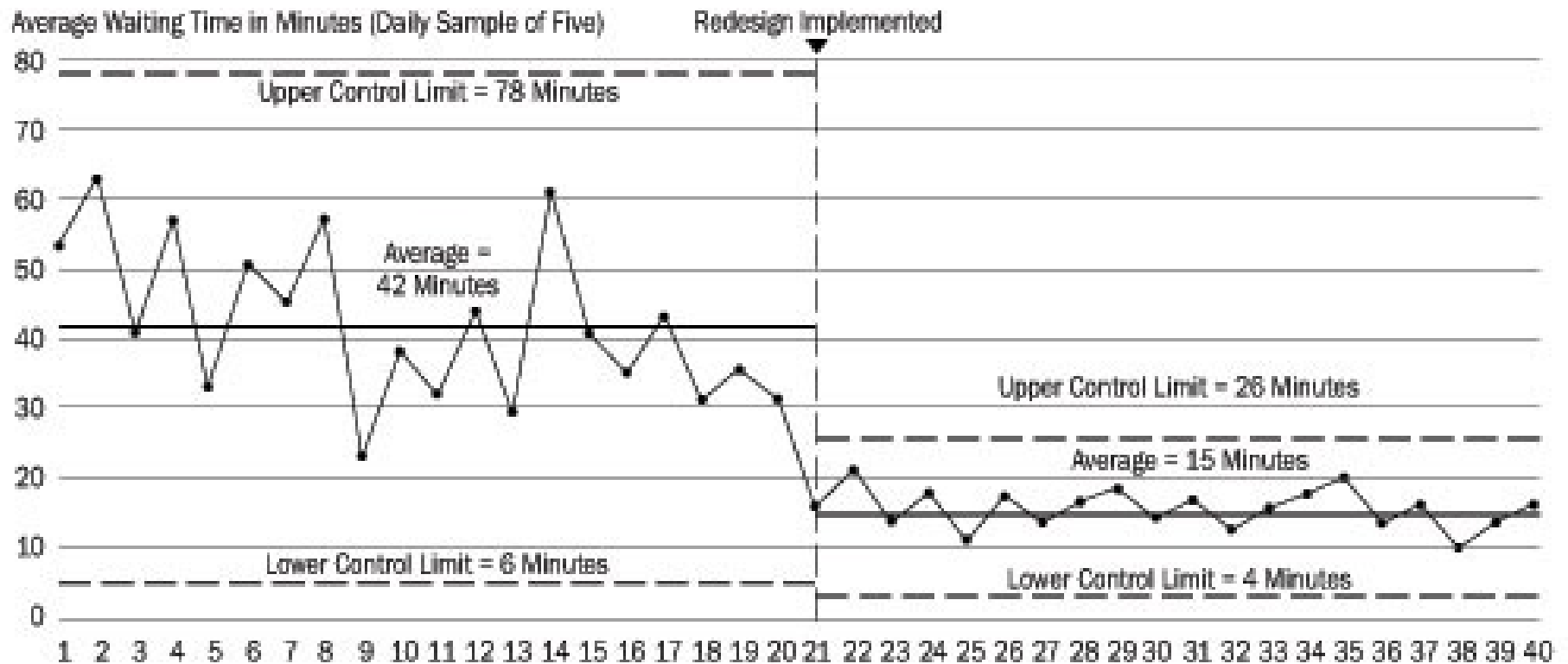
Run Chart

- **Variation in some process over time and detection of causes of that variation**
- **Trends or other non-random variation in the process**
- **Used to help predict future performance.**



Control Chart

Control Chart of Average Wait Time before and after a Redesign





Pareto Chart

- **Provides facts needed for setting priorities.**
- **Organizes and displays information to show the relative importance of various problems or causes of problems.**
- **Orders (from the highest to the lowest) items relative to some measurable effect of interest: frequency, cost, time.**

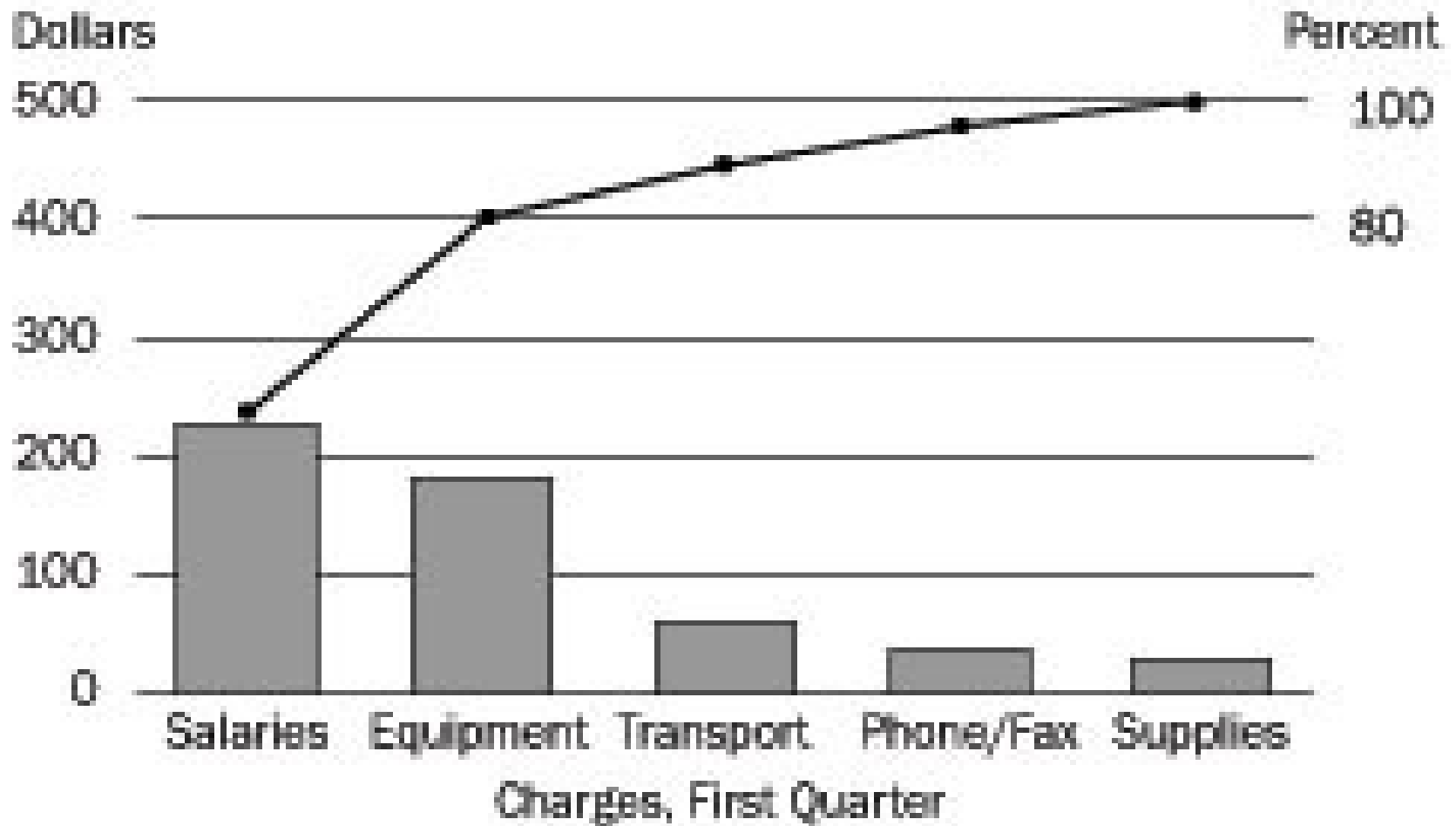


Pareto Principle

- **“When several factors affect a situation, a few factors will account for most of the impact.**
- **80 percent of variation observed in everyday processes can be explained by a mere 20 percent of the causes of that variation.**



Pareto Chart





Flow Charts

- **Graphic representation of how a process works, showing, at a minimum, the sequence of steps.**



Use Flowcharts to:

- **Understand processes**
- **Simplify processes**
- **Determine monitoring or data collection points**
- **Recognize unnecessary steps**
- **Learn who will be affected by decisions**

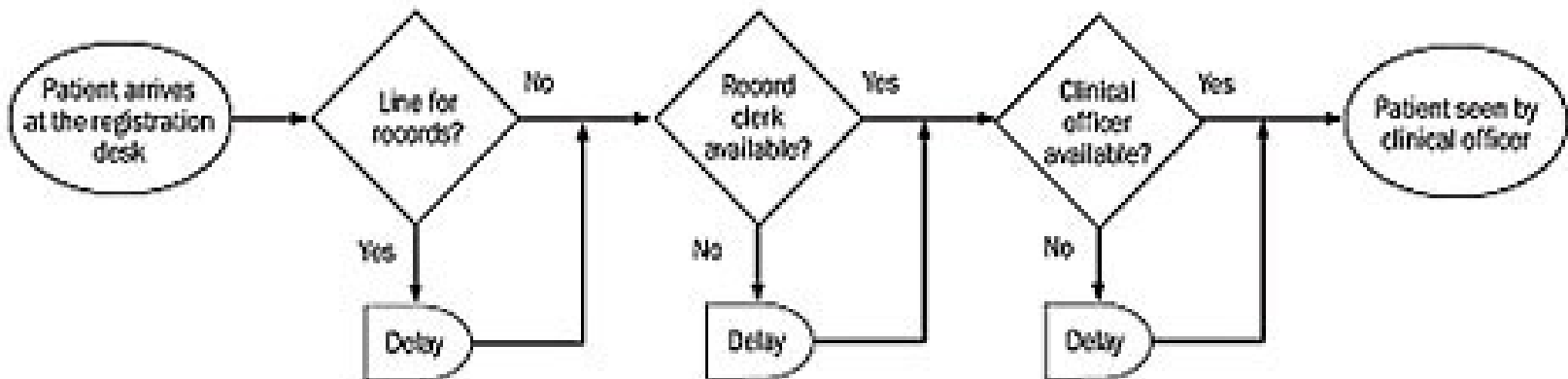


Flow Charts

High-Level Flowchart of Prenatal Care



Detailed Flowchart of Patient Registration





Long-Term Significance

- **Unmet mental health needs**
- **Tobacco's legacy**



Take Home Points

- **Monitoring of health services involves comparing actual performance with expected performance**
- **Difficult but necessary for performance improvement and decision making**